

NOTES ON THE HEBRIDAE (INSECTA: HEMIPTERA-HETEROPTERA) OF AUSTRALIA WITH DESCRIPTIONS OF THREE NEW SPECIES

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Summary

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The two known species of Australian Hebridae are redescribed. Keys to genera and species are provided. Three new species, *Hebrus woodwardi* sp. nov., *H. monteithi* sp. nov. and *H. nauriangiei* sp. nov. are described from Queensland and the Northern Territory. Lectotypes are designated for *Hebrus axillaris* Horváth and *Naeozeugus lutensis* Hale. Distributional and field notes are given for all the species.

KEY WORDS: Hebridae, *Hebrus*, *Merragata*, distribution.

Introduction

The described Australian hebrid fauna is small with two species, *Hebrus axillaris* Horváth (= *Naeozeugus latensis* Hale) and *Merragata hackeri* Hungerford. *Hebrus* is a cosmopolitan genus which has been split into a number of subgenera of disputed validity. The most recent comprehensive account of the Hebridae is that of Andersen (1982) who estimates that there are about 110 species. Lundblad (1933) gives an overview of the family listing twelve species from the Indo-Australian Pacific region, two species being listed from New Guinea. At present there are 18 *Hebrus* species recorded from the Oriental region, additional species being described from the Philippines (Porter 1954, 1959) and Formosa [Taiwan] (Miyamoto 1964, 1965). The related Oriental genera, *Timasius* Distant, *Neotimasius* Andersen and *Elyranus* Distant have been revised by Andersen (1981). These genera are known from the Indian sub-continent, Sri Lanka, Thailand, Malaya, Sumatra, Java and a single record from China. All the species appear to be hygropetric occurring on wet rock faces or in the splash zone of flowing water. The absence of records from New Guinea and northern Australia may reflect lack of collecting rather than the absence of suitable habitats.

The genus *Hebrus* was split into six subgenera by Andersen (1981). Cobben (1982) suggested that the use of subgeneric groupings should be abandoned and no attempt has been made here to assign Australian *Hebrus* to subgenera. The Australian *Hebrus* species so far known form a diverse group which is difficult to characterise in species-group descriptions.

The Hebridae are characterised within the Gerrromorpha by the presence of a pair of prominent plates or bucculae on the ventral surface of the head which cover the base of the rostrum.

The tarsi of all legs are two-segmented, the first is always very short.

Andersen (1982) comments that the male genitalia of hebrids are always hidden from view when viewed dorsally. One new species described from Queensland differs in that the parameres (claspers of Andersen 1982) are clearly visible from the dorsal aspect.

Hebrids are small (1.5-2.0 mm long) stout bodied bugs. *Hebrus* is covered dorsally with a velvety hydrofuge-like pile. Depending upon the angle of viewing, the dorsal surface is variously iridescent. The underside is not so densely velvety pilose; sternites are usually shining with adpressed white or golden hairs. The hind legs are always slightly longer than the front and middle pairs and legs are usually equally spaced. All tarsal-claws are apical. The ocelli and scutellum (metanotal elevation of Andersen 1982) are well developed in winged forms. *Merragata* is much like *Hebrus* but the dorsal pilosity, especially of the head being longer and not iridescent.

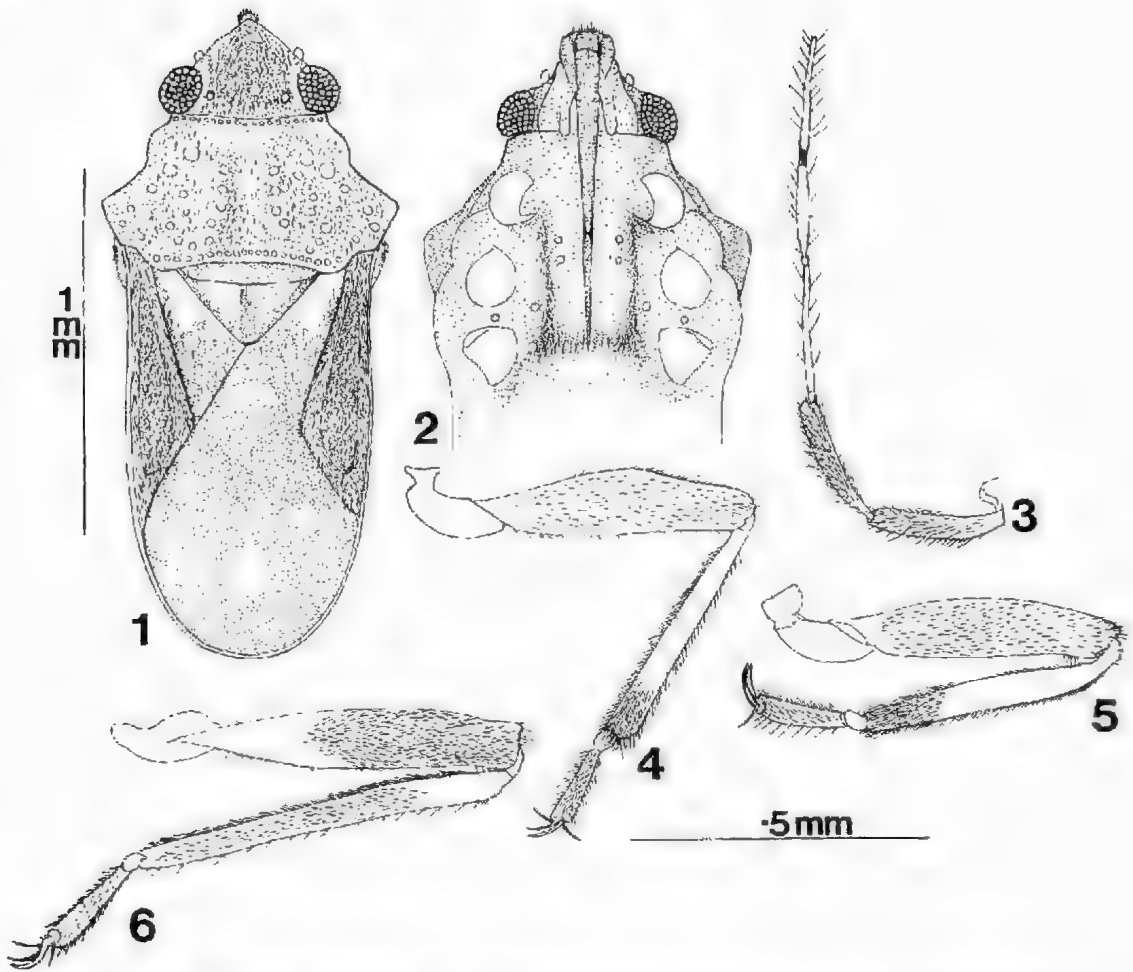
Key to Australian genera of Hebridae

- Antennae subflagelliform. Fourth segment subdivided by a coil-like or membranous zone. Antennal length subequal or longer than the greatest width of the pronotum. *Hebrus* Curtis, 1833
- Antennal segments short and club-like. Fourth segment not subdivided. Antennal length distinctly shorter than the greatest width of the pronotum.
- *Merragata* Buchanan-White, 1877

Key to the Australian species of *Hebrus*

- 1 Apex of scutellum acuminate, not bifurcate (Fig. 1)2
Apex of scutellum not acuminate but slightly bifurcate (Fig. 18). *H. nauriangiei* sp. nov.
- 2 Elytral membrane clearly not reaching the end of the abdomen especially in the male (Fig. 13). Parameres projecting beyond the end of the abdomen (Fig. 14) *H. monteithi* sp. nov.
- Elytral membrane almost reaching or surpassing the end of the abdomen (Fig. 7). Parameres not projecting beyond genital capsule. 3

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Figs 1-6. *Hebrus axillaris* Horváth; 1, dorsum Lectotype ♀; 2, ventral aspect of head and thorax; 3, antennae; 4, fore leg; 5, middle leg; 6, hind leg. Sundown N.P., Qld ♂.

3 Elytral membrane almost reaching the end of the abdomen (Fig. 1). Third antennal segment 1.5× length of the 2nd segment..... *H. axillaris* Horváth
Elytral membrane just surpassing the end of the abdomen (Fig. 7). Third antennal segment 2× length of the 2nd segment..... *H. woodwardi* sp. nov.

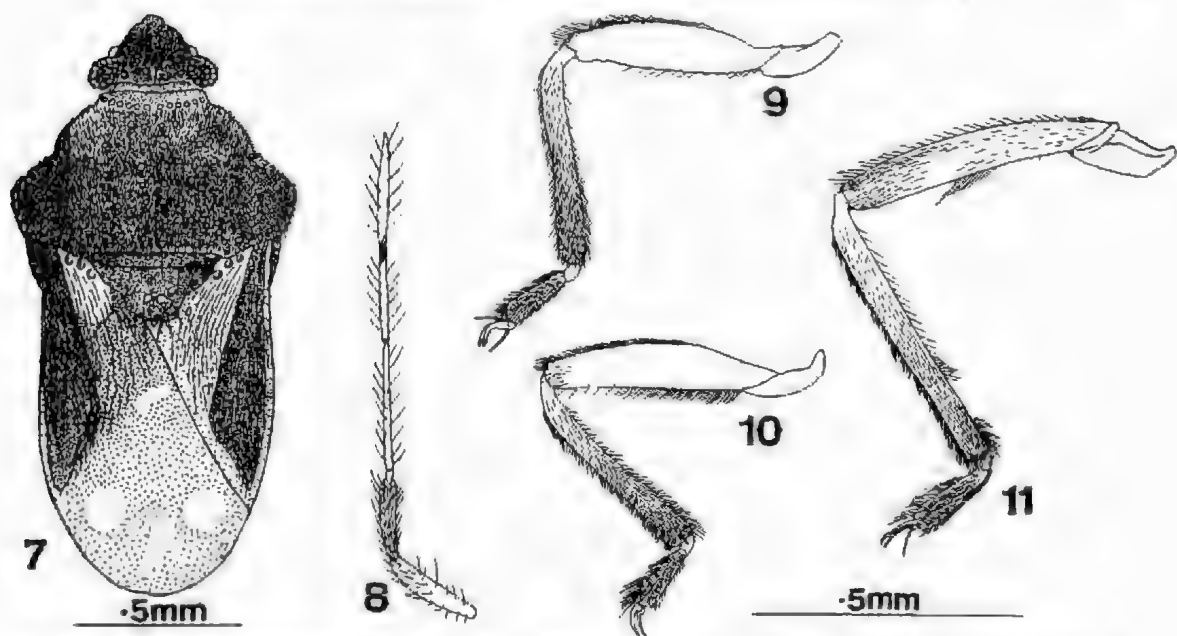
Hebrus axillaris Horváth
FIGS 1-6, 25, 30

Hebrus axillaris Horváth, 1902, p. 606; Lundblad, 1933, p. 263 (synonymy of *Naeoгеus latensis* Hale, 1926 with *axillaris*); Hungerford, 1934, p. 70, (distribution Qld.).
Naeoгеus latensis Hale, 1926, pp. 196-198.

Types: Lectotype female and 2 ♀♀ paralectotypes, New South Wales, Tweed River, A. M. Lea in the Hungarian Natural History Museum, Budapest, vid.

Distribution: S. Aust., N.S.W., Vic., Tas. and Qld.
Size: ♂♂, ♀♀ 1.7 - 2 mm long, width across widest part of pronotum .75 - .85 mm

Colour: Variable, head and anterior 1/3 of pronotum pale orange brown to black. Margins round eyes silvery tomentose, Antennae dark brown. Pronotum reddish brown with two (1+1) black areas medianly. Mesoscutellar lobe and scutellum dark brown. Head, pronotum and scutellum with short fine iridescent spicules. Forewings dark brown with long golden hairs and with greyish white patches proximally adjacent to scutellum and hind margin of pronotum. Membrane dark smokey brown with paler areas. Underside of head and bucculae pale yellow. Pleurites mostly black with posterior margin of propleura reddish brown. Legs yellowish brown. Sternites shining black with short silvery pubescence. 'Dark form' head black, medianly reddish brown. Pronotum anteriorly narrowly black, remainder reddish brown. Scutellum and forewings including membrane black. Forewings with two (1+1) white patches and long golden



Figs 7-11 *Hebrus woodwardi* sp. nov. Paratype ♂, Split Rock, Qld. 7, dorsum; 8, antennae; 9, fore leg; 10, middle leg; 11, hind leg

pubescence. Underside black with sparse silvery pubescence.

Fresh or very recently collected material tends to be darker than old specimens.

Structure: Interocular space about $2\times$ maximum eye width. Median head length about .66 median head width. Tubercles adjacent to antennal insertions small (Fig. 1). Antennae 1:2:3:4: - 7.5-7.5-13.5. First and 3rd antennal segments subequal, 2nd clearly shorter, 4th more or less subequal to combined lengths of 2nd and 3rd segments and subdivided by coil-like section (Fig. 3). Vertex with pair of median longitudinal furrows converging posteriorly. Bucculae short just reaching pronotum with two shallow depressions (Fig. 25). Lower margin straight with caudal or free end slightly curved.

Pronotal width $2\times$ its median length and head head width across eyes. Posterior margin with two (1+1) lobes either side of scutellum. Pronotum at its broadest slightly elevated and rugose. Median lateral angles depressed. Mesoscutellar lobe and scutellum half median length of pronotum. Scutellum ridged longitudinally and laterally forming two shallow depressions either side of mid line. Connexivum visible around membrane. Rostrum reaching hind coxae.

Front femur slightly more robust than middle femur (Figs 4 & 5). Hind femur slightly longer than median pronotal length. No significant differences in ratios of front and middle legs between males

and females. Hind legs $1.3\times$ longer than front and middle legs.

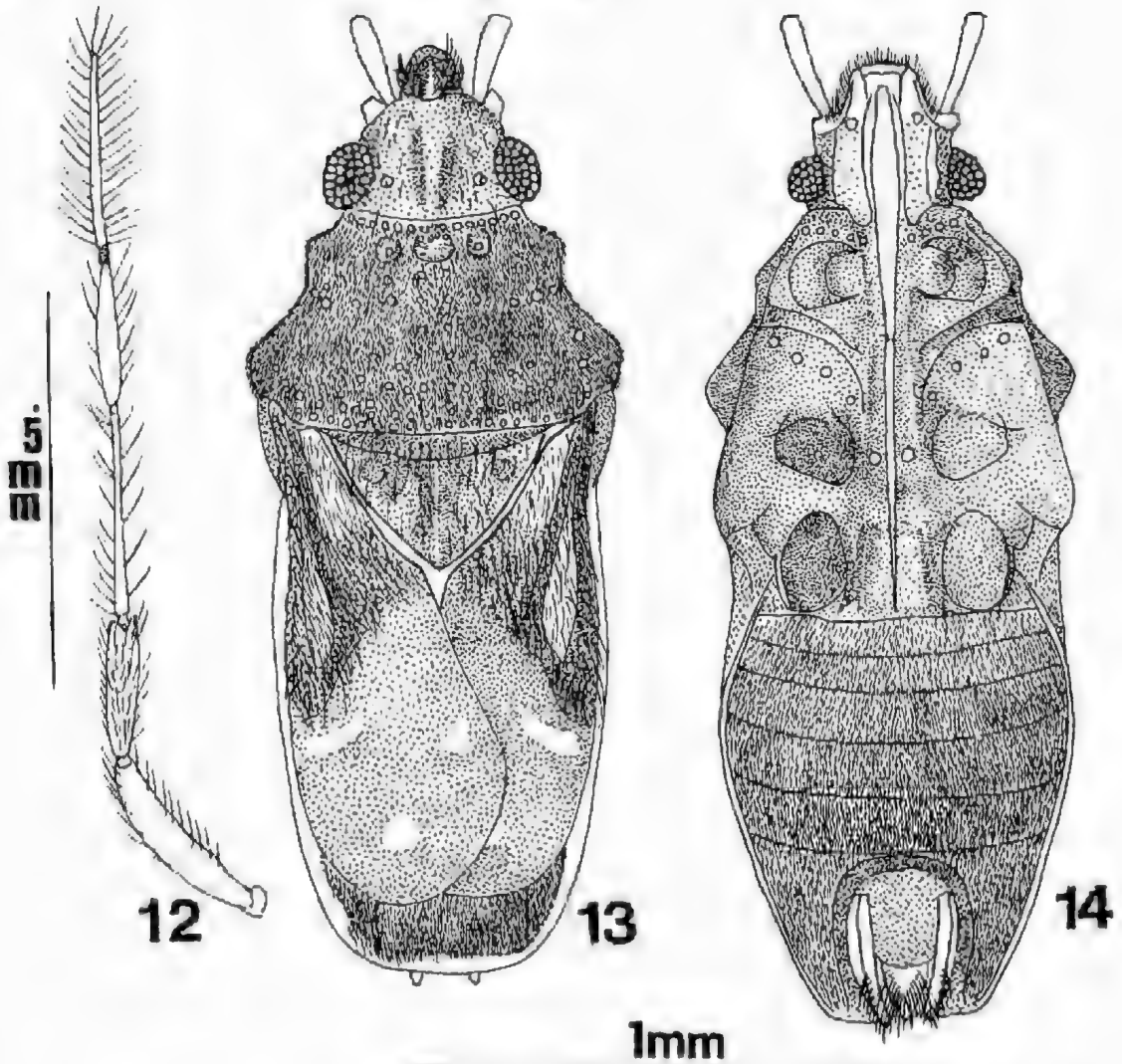
Male genital capsule (Fig. 30).

Lectotype Designation: Horváth's original description does not state on how many specimens from the type locality he based the description. In the Hungarian National Museum there are three specimens, originally mounted on a piece of card; labelled - N.S.W. Tweed R.; Lea; 3-92. A printed red label 'TYPUS'. A label in Horváth's handwriting - *Hebrus axillaris* Horv. and a hand written label '75 HV WF?'. The types are all females, they have been remounted individually on card points on one pin. One 'point' has been marked with a red spot, this female is designated and labelled Lectotype, the remaining two females are designated paralectotypes.

Notes on the type series of *Nacogeus latensis* Hale.

The 'type series' is in the South Australian Museum, Adelaide. Hale (1926: 197) gives 'Adelaide' as the type locality. Mounted on a piece of card labelled TYPE, Torrens River, Adelaide, Herbert M. Hale are a ♂ & ♀. The ♂ is almost certainly the specimen figured by Hale (1926: 197; Fig. 81). This ♂ is designated and labelled Lectotype, the accompanying ♀ is labelled and designated paralectotype.

There is some ambiguity about the remainder of Hale's type series as he did not give a precise locality other than Adelaide. There are four series of carded



Figs 12-14. *Hebrus mantelli* sp. nov. Paratype ♂, Wallamun Falls, Qld. 12, antennae; 13, dorsum; 14, venter.

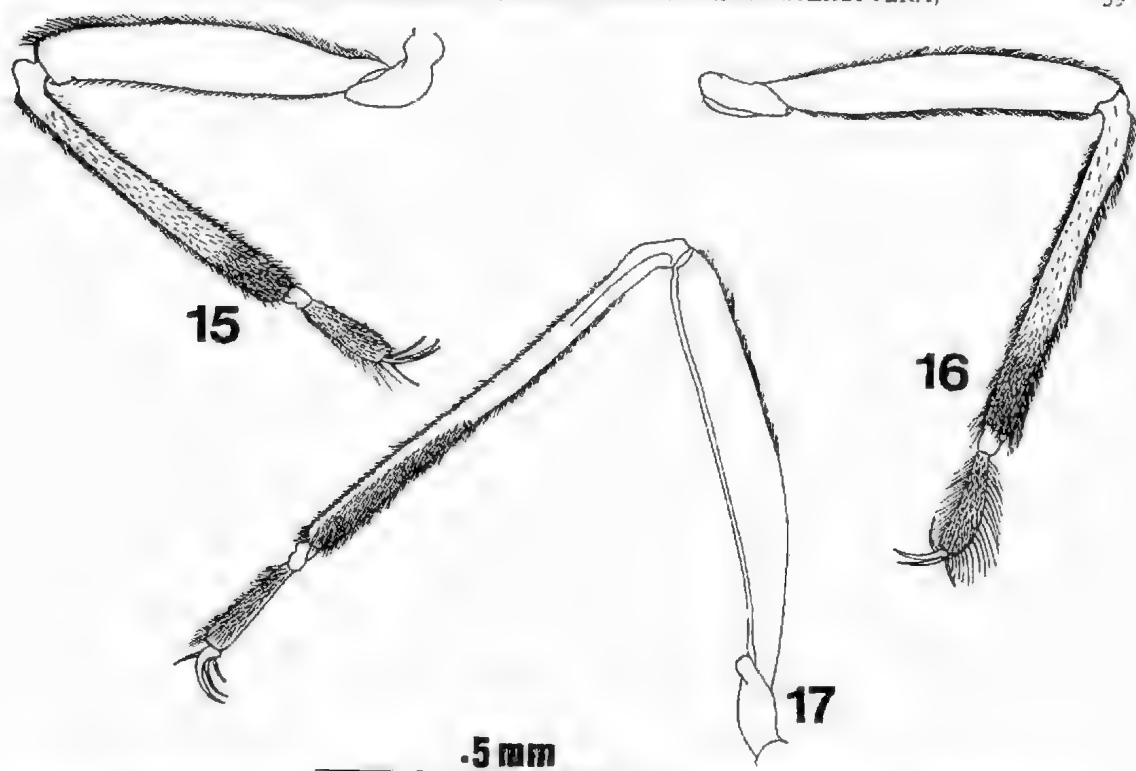
specimens. The first with 1♂ & 7♀♀ bearing a red printed Type label with *Naevogeus latensis* Hale in what is presumably Hale's handwriting. The locality label (typed-photographed and reduced) reads River Torrens, Adelaide, H.M. Hale. The second card with 4♂♂ & 4♀♀ bears a red Paratype label; the other labels are identical with the first. A third card with 1♂ & 1♀ labelled Paratype is labelled in the same manner. The specimens on these three cards are all regarded as Paratotypes and labelled accordingly.

The fourth card has 4♀♀ labelled Paratype from the Murray River, F.R. Zeitz. These may not be part of Hale's original type series as the collector's name is not mentioned and Hale always noted collectors

when describing or listing material not collected by himself.

Amongst additional material from Adelaide collected by Hale but not labelled Paratype are two small series of carded specimens with a typed label 'Tussocks of thin reeds growing in wet mud on banks of River Torrens 28.iii.1921'.

Material examined: Type series of *acillaris* and *latensis*; Kara Creek near Jindabyne, N.S.W., 940 m, 16.iii.1979; The Lakes Creek near Jindabyne, N.S.W., 1160 m, 16.iii.1979; Phillip Island, Vic. pool completely covered with floating vegetation, 31.iii.1985; Moggill Farm Dam near Brisbane, Qld., 6.vi.1979; Sundown National Park near Stanthorpe, farm dam, 26.iv.1985 Qld - I. Lansbury Coll. Macallister-Thomson River Junction, Vic., 19.ii.1977, Nat. Mus. Victoria Survey, M. Malpas - N.T. Museum Coll.



Figs 15-17. *Hebrus monteithi* sp. nov. Paratype ♂, Wallaman Falls, Qld. 15, fore leg; 16, middle leg; 17, hind leg.

Devonport & Launceston, Tas. Myponga Swamps, S. Aust.; Glenfield, N.S.W. - South Australian Museum, Adelaide.

Hebrus woodwardi sp. nov.

FIGS 7-11, 27, 31 & 32

Holotype: Female, Paratypes 6♀ and 1♂, Queensland, Split Rock, 14 km S. of Laura, 23-26.vi.1975, G.B. Monteith in the Queensland Museum, Brisbane.

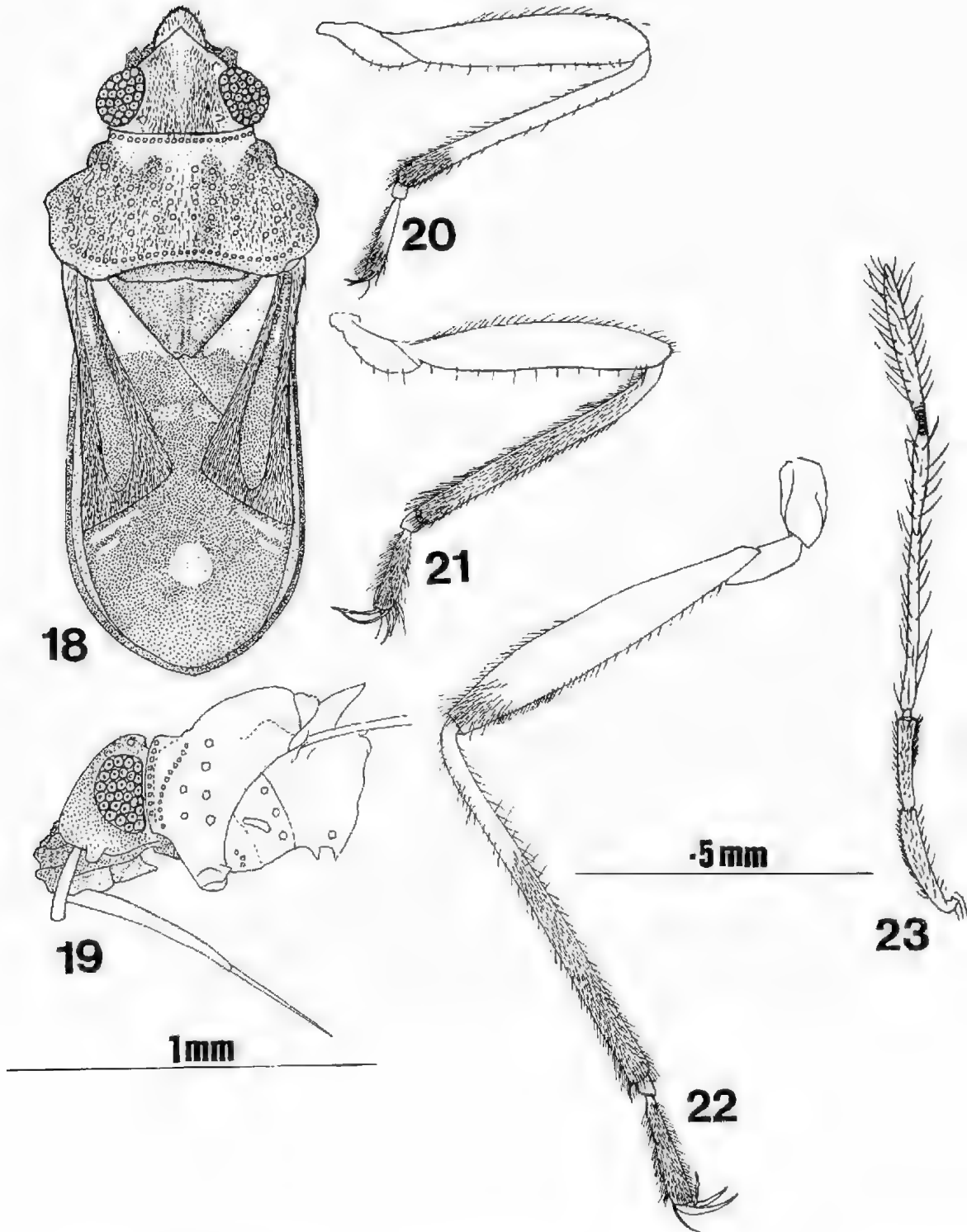
Distribution: Queensland and the Northern Territory.

Size: ♂, ♀♀ 1.68 - 1.88 mm long, width across widest part of pronotum .82 - .94 mm.

Colour: Head and pronotum reddish brown, lateral margins of vertex along inner margin of eyes and pits silvery tomentose. Antennae dark brown. Head and pronotum covered with golden spicules, some iridescent. Mesoscutellar lobe and scutellum very dark brown. Forewings; clavus and corium varying between rich reddish brown and dark brown, apical part of clavus greyish white. Apex of scutellum, clavus and corium covered with long golden hairs. Membrane smokey brown with four paler areas (Fig. 7). Lateral margins of head, bucculae, rostrum and femora pale yellow. Tibiae and tarsi slightly darker distally. Coxal insertions dark reddish brown.

Thoracic venter dark brown, sternites darker covered with fine silvery pubescence.

Structure: Interocular space about 2× maximum eye width. Median head length .66× greatest head width. Tubercles adjacent to antennal insertion small (Fig. 7). Antennae 1:2:3:4: - 7-5-10-14.5. Fourth segment subdivided by coil-like section (Fig. 8). Third segment 2× length of 2nd; 4th segment subequal to 2nd and 3rd combined. Total antennal length about half body length. Vertex with faint longitudinal furrow becoming obsolescent anteriorly. Bucculae short, usually just reaching pronotum with two depressions (Fig. 27), lower margin curved. Pronotal width 2× median length and head width across eyes. Posterior margin with two (1+1) lobes either side of scutellum. Anterior collar of pronotum sharply depressed with regular transverse row of pits. Immediately behind anterior collar, two (1+1) depressions either side of a broad longitudinal ridge which have two rows of shallow pits. Median lateral angles slightly depressed. Mesoscutellar lobe and scutellum .6× median pronotal length. Scutellum with median longitudinal ridge and lateral margins slightly raised forming two shallow depressions. Apex of scutellum truncated with minute median projections (Fig. 7).



Figs 18–23. *Hebrus nourlangiei* sp. nov. Paratype ♀, Nourlangie Rock area, N.T., 18, dorsum; 19, side view of head and pronotum; 20, fore leg; 21, middle leg; 22, hind leg; 23, antennae.

forewings obscuring abdomen, membrane reaching or overlapping end of abdomen, Rostrum with tip just reaching metasternal suture.

Front and middle femora moderately robust (Figs 9 & 10). Hind femur slightly longer than median pronotal length. Male hind legs 1.25x longer than front and middle legs, female hind legs 1.32x longer.

Male genital capsule (Figs 31 & 32).

Referred Material: Pat Creek, 11 km N. of Archer Crossing via Coen, Qld, 28-29.vi.1975, G.B. Monteith, Qld Museum, Brisbane. This ♀ differs from the type series in that the pale areas of the membrane are almost obsolescent. Red Lily Lagoon near Daly River, N.T., (13°45'S 130°42'E), 9.viii.1980, M.B. Malipatil, 1♂; Manton Reservoir on Stuart Highway, N.T., in flood debris near water edge, 9.xii.1979, M.B. Malipatil, 2♂♂, 3♀♀; Crocodile Creek, 14°29'S-131°22'E near Dorisvale, N.T., 17-18.xi.1984, M.B. Malipatil, 1♂; Lake Bennett area c. 25 km SE of Manton Dam, N.T., 29-30.xii.1979, at M.V. light, M.B. Malipatil, 1♂; U.D.P. Falls, N.T., 18-19.vii.1980, at M.V. light, M.B. Malipatil, 1♀, Northern Territory Museum Coll.

Hebrus woodwardi is very similar to *H. axillaris*; the slightly longer membrane reaching or overlapping the end of the abdomen, the relatively longer 3rd antennal segment of *H. woodwardi* and differences in the male genitalia distinguish *H. woodwardi* from *H. axillaris*.

Hebrus monteithii sp. nov.

FIGS 12-17, 26, 33-35

Holotype: Male. Paratypes 7 ♂♂ (1 slide mounted) and 8 ♀♀. Qld, Wallaman Falls via Ingham, 1.x.1980, rainforest 500 m. Collected from rainforest floor by brushing twigs, G.B. Monteith in the Qld Museum, Brisbane.

Distribution: N.E. Qld.

Size: ♂♂, ♀♀ 1.9 - 2 mm long, width across widest part of pronotum .77 - .84 mm.

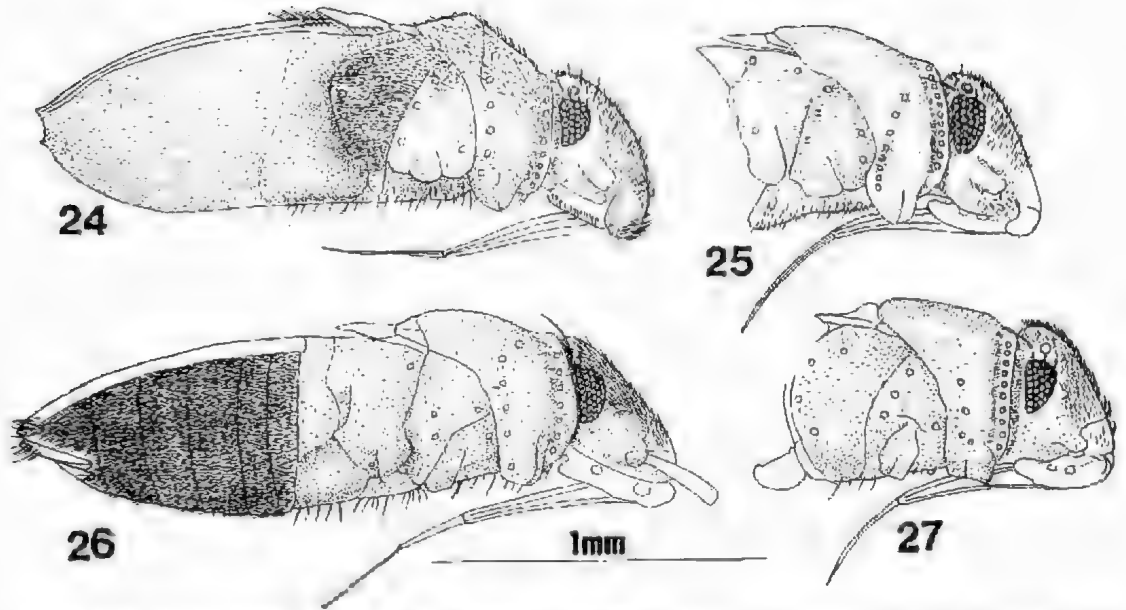
Colour: Head anteriorly black, posteriorly dark reddish brown, margins round eyes silvery tomentose. Pronotum dark reddish brown, humeral angles and median raised area of disc with iridescent bluish areas. Pronotum with sparse golden pubescence. Mesoscutellar lobe and scutellum black with sparse golden hairs slightly longer than those on pronotum. Forewings, clavus with elongate greyish white patches either side of scutellum. Corium and connexivum reddish brown. Clavus and corium with layer of golden pubescence slightly shorter than on visible area of connexivum. Membrane dark brown with faint brownish white blotches. Lateral margins of head, bucculae, rostrum, legs other than distal apices of femora pale yellow. Antennae dark brown. Underside of thorax dark brown to black. Sternites

shining black covered with fine silvery pubescence. *Structure:* Interocular space about 2x maximum eye width. Median head length subequal to greatest head width. Tubercles adjacent to antenniferous tubercles prominent (Fig. 13). Antennae 1:2:3:4 = 8.3-6-11-16.25. Fourth segment subdivided by coil-like section (Fig. 12). Third segment almost 2x length of 2nd and 4th subequal to 2nd & 3rd combined. Total antennal length slightly more than half length of body (.57-.58). Vertex with single median longitudinal furrow, difficult to see as this part of vertex densely pilose. Bucculae prominent, almost or reaching pronotum with two conspicuous circular depressions, free end rounded, ventral margin slightly sinuate (Fig. 26). Pronotal width varying between 1.7-1.96x median pronotal length and width of head across eyes. Anterior collar of pronotum narrow with transverse row of small circular pits. Anterior lateral margins straight, medially with prominent depressions. Pronotal disc elevated posterior of parallel anterior part of disc. Humeral lateral angles depressed. Posterior lateral margins emarginate, hind margin evenly curved. Mesoscutellar lobe and scutellum about half median pronotal length. Scutellum with two shallow depressions either side of median ridge. Lateral margins not conspicuously raised. Lateral margins and apex with minute iridescent spicules. Forewings small, much of connexivum exposed, membrane not reaching end of abdomen, membrane of male shorter than that of female. Connexivum shining, Rostral groove very conspicuous, rostrum almost reaching posterior margin of metasternum.

Front and middle legs similar (Figs 15 & 16) hind legs longer (Fig. 17). Hind femur 1.4 - 1.5x longer than median pronotal length. Male hind legs 1.27x longer than front and middle legs and 1.37x longer in females.

Male genitalia: Viewed dorsally, tips of symmetrical parameres extending beyond end of abdomen. Proctiger hairy. Parameres elongate, very pilose and much longer than pygophore (genital capsule) at rest and clearly visible *in situ* in undissected males (Fig. 33). Female genitalia (Figs 34 & 35) conforms to general hebrid pattern.

This species differs from all known Australian hebrids; the short membrane, large tubercles adjacent to antenniferous tubercles and prominent parameres clearly distinguish *H. monteithii* from other species. There is some similarity between *H. monteithii* and two species from the Philippine Islands, *Hebrus drakei* and *H. harrisi* Porter both described from Muntalban, Rizal Province. Both of these species have prominent elongate parameres extending beyond genital capsule. Porter does not state if the parameres are visible dorsally.



Figs 24-27. *Merragata* and *Hebrus* side view 24, *Merragata haekeri* Hungerford, Sundown N.P., Qld; *Hebrus astillus* Horváth, Phillip Is. Vic; 26, *Hebrus munteithi* sp. nov.; 27, *Hebrus woodwardi* sp. nov.

Hebrus nourlangiei sp. nov.

FIGS 18-23

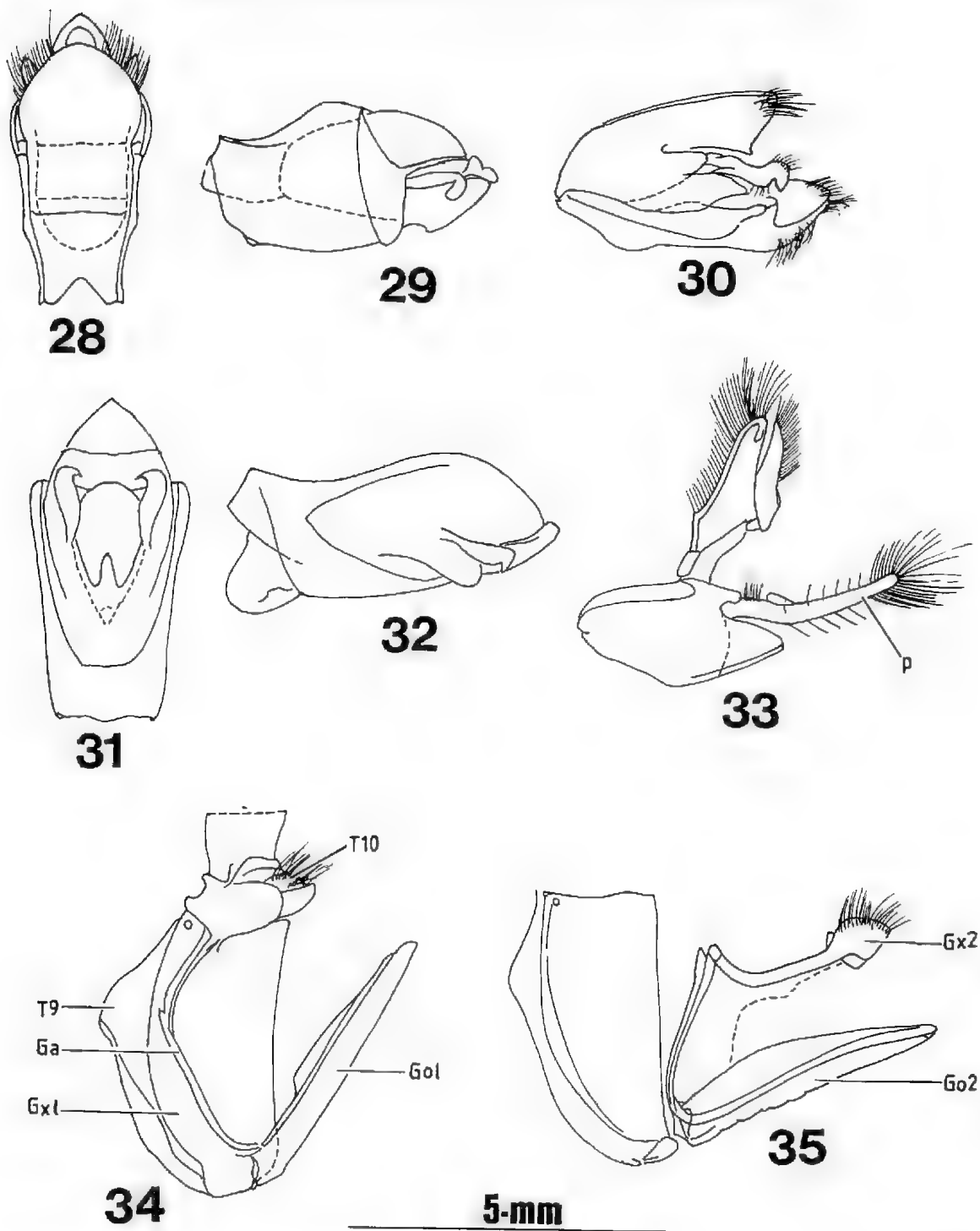
Holotype: female, Paratypes 1♂ and 1♀, Northern Territory, Kakadu National Park, Nourlangie Rock area, from water seepage, 27.iii.1980, M.B. Malipatil, N.T. Museum Coll.

Distribution: Northern Territory.

Size: ♂ ♀ 1.7-1.8 mm long, width across widest part of pronotum .7 mm.

Colour: Head dark velvety reddish brown. Margins round eyes broadly silvery tomentose. Eyes and ocelli paler than dark areas of vertex. Antennae dark yellowish brown. Inner anterior margin of pronotum with pale orange brown trilobed zone. Outer margins and remainder of pronotum dark velvety reddish brown. Head and pronotum with minute iridescent spicules, longer hairs also iridescent. Mesoscutellar lobe and scutellum same colour as posterior margin of pronotum. Scutellum fringed with short golden hairs. Clavus with large greyish white are reaching apex of scutellum. Corial cell slightly paler anteriorly with long yellow hairs. Membrane smokey brown with four faint greyish white blotches. Connexivum yellowish brown. Underside of head and bucculae pale yellow. Pro, meso and metasternum reddish brown. Coxal insertions pale yellow. Rostrum and legs pale yellow with upper distal apices of femora darker. Sternites dark reddish brown shining with adpressed golden hairs.

Structure: Interocular space slightly less than 2x maximum eye width. Median head length just over .66x greatest head width. Vertex strongly raised above eyes. Two (1+1) line longitudinal furrows which converge posterior of line through ocelli. Margins of vertex converging in front of eyes, tip acuminate. Antenniferous tubercles each with truncate projection. Antennae 1:2:3:4 - 7-5-10-15.5. Fourth segment subdivided by coil-like section (Fig. 23). Third segment 2x length 2nd, 4th equal to combined lengths of 2nd & 3rd segments. Antennae just over half length of body. Bucculae short not reaching pronotum, with two depressions, free end bluntly acuminate. Lower margin with 'step' (Fig. 19). Anterior margin of pronotum flat and lateral margins raised. Pronotum divided by broad longitudinal depression lined with circular pits. Fore margin of raised areas deeply emarginate. Anterior lateral margins straight, humeral angles sharply produced. Posterior margin with false suture with minute shining golden brown spicules. Edges of raised lobes fringed with small pits. Lateral margins of hind margin deeply emarginate, remainder of posterior margin evenly rounded. Dense pilosity of pronotum makes circular 'pits' rather difficult to see. Pronotal width 2.1x greater than median length, 1.8x width of head across eyes. Mesoscutellar lobe and scutellum .66x median pronotal length. Scutellum depressed with lateral margins and faint median keel forming two shallow



Figs 28-35. Hebrid ♂ & ♀ genitalia. 28 & 29 *Merragata hackeri*, 28, genital capsule; 29, *ibid* side view; 30, *Hebrus axillaris* Horváth genital capsule side view; 31 & 32 *Hebrus woodwardi* sp. nov. 31, dorsal view; 32, *ibid* side view; 33, *Hebrus monteithi* sp. nov. ♂ genital capsule, side view; 34 & 35 ♀ genitalia *H. monteithi* sp. nov. Terminology p paramere; Ga gonangulum; Gol, Go2 first and second gonapophyses; Gx1, Gx2 first and second gonocoxae; T9 T10 abdominal terga 9 & 10.

depressions, apex of scutellum bifurcate (Fig. 18). Forewings well developed, membrane almost reaching end of abdomen. Rositum almost reaching posterior margin of metasternum.

Front and middle legs similar (Figs 20 & 21). Hind legs 1.38x longer than front and middle legs. Hind femur 1.68x longer than median pronotal length (Fig. 22).

Single male specimen too damaged to figure genitalia. Head and thorax detached from remnants of abdomen.

Referred Material: A female collected from Koongara Creek, (a few Km from Nourlangie Rock) 8-10.v.1979 Coll. I. Lansbury appears to be identical with *H. nourlangiei*. Koongara Creek is a series of sluggish rocky pools joined by a shaded narrow creek.

Hebrus nourlangiei is immediately recognisable from other Australian species by the bifurcate apex of the scutellum and narrow interocular distance.

Merragata huckeri Hungerford

FIGS 24, 28-29, 36-44

Merragata huckeri Hungerford, 1934, pp. 70-71

Type specimens: Holotype ♂, allotype ♀ and some Paratypes, Qld, Brisbane, December, 1932. H. Hacker; Snow Entomological Collections, University of Kansas. Additional Paratypes (same data), British Museum (Natural History) and South Australian Museum, Adelaide.

Distribution: Vic., Qld and N.T.

Size: ♂♂, ♀♀, 1.47 - 1.8 mm long, width across widest part of pronotum .77 - .9 mm.

Colour: Dorsally pale yellowish brown, elytra milky white adjacent to scutellum, sometimes slightly darker across membrane. Mesoscutellar lobe and scutellum dark brown, ridges on scutellum same colour as pronotum. Head, pronotum and lateral margins of elytra with long pale yellowish hairs. Underside of head and bucculae same colour as dorsal aspect. Prosternum dark yellowish brown. Meso and metasternum varying between reddish brown and black distally. Sternites black covered with long pale golden hairs. Legs pale yellow, distal apices of tibiae and tarsi narrowly annulated dark brown. Antennae yellowish brown, 4th segment black, 3rd segment sometimes also black.

Structure: Interocular space 3x or more maximum eye width. Median head length .64 - .78x median head width. Vertex with two (1+1) faint longitudinal furrows converging between ocelli. Posterior margin of head raised with ocelli strongly protuberant and black. Head covered with fine whitish pubescence, shorter ventrally. Antennae 1:2:3:4: - 4.6-4.75 -3.5-5.5, all segments covered with fine hairs (Fig. 38). Bucculae short, not reaching pronotum, lower margin appearing slightly curved/sinuate, free end

angular, medianly with large depression (Fig. 24). Pronotal width 2x median length and head width across eyes. Anterior collar narrow with transverse row of pits. Anterior lobe with two (1+1) deeply slightly diverging depressions with a median longitudinal depression consisting of coalescing pits, each with fine silvery tomentose margins between. Anterior lateral margins more or less straight, shining without depressions. Pronotal humeral angles depressed, remainder of disc slightly raised with scattered pits. Posterior margin convex, medianly slightly emarginate around mesoscutellar lobe (Fig. 36). Scutellum and mesoscutellar lobe less than half median pronotal length (.41). Scutellum slightly wider than mesoscutellar lobe. Basal lateral margins raised curving towards apex with two (1+1) pits basally, median carina short. Hemelytral venation typical hebrid. Connexivum visible laterally, membrane overlapping end of abdomen. Venation heavily chitinised, usually same colour as pronotum. Anterior part of elytra covered with long fine hairs same colour as background. Abdominal ridges curved, converging slightly distally. Tergites black and shining. Rostrum short not reaching distal margin of metasternum.

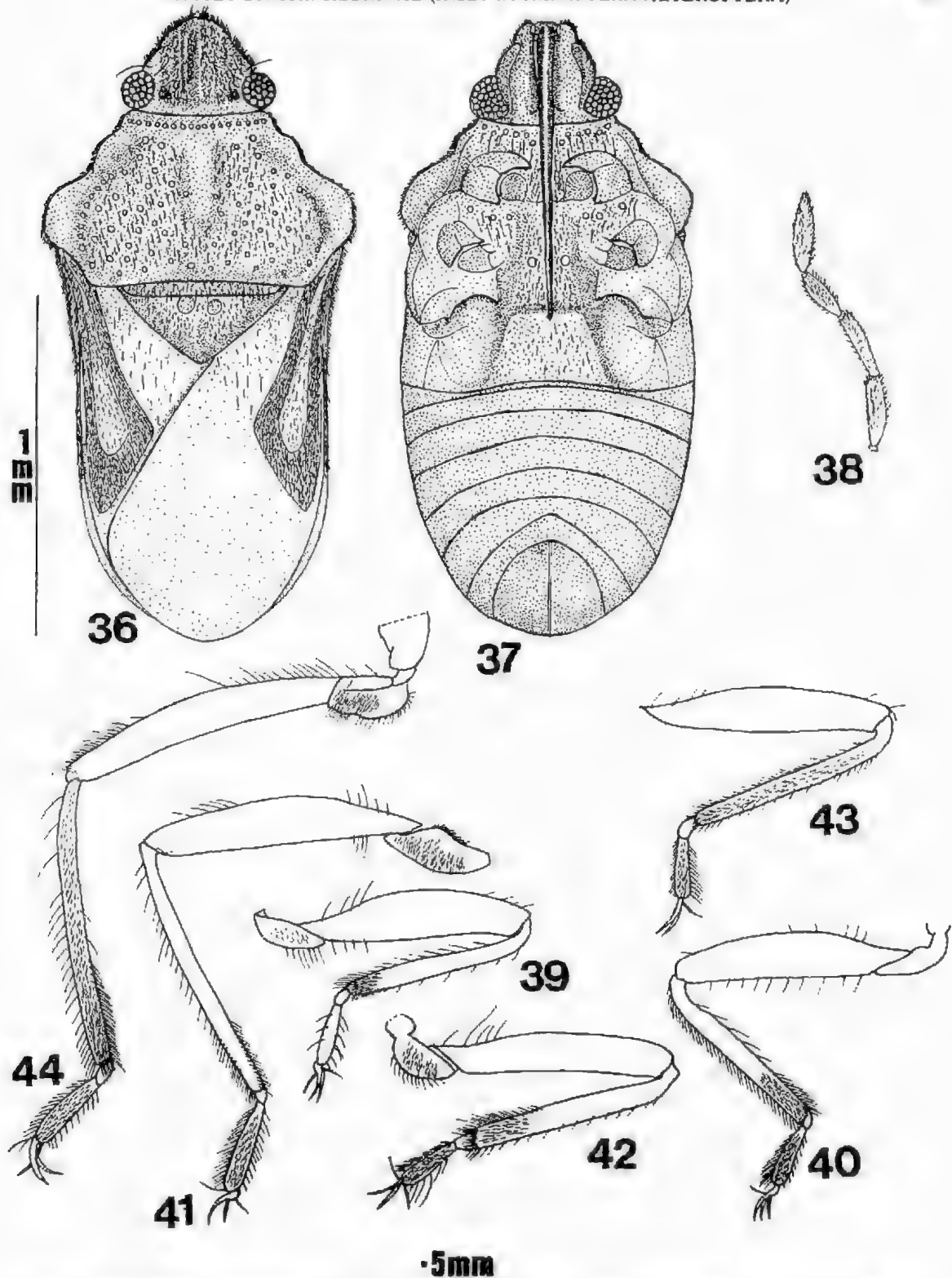
Fore coxae close together. Prosternum and collar with scattered large pits. Middle coxae wider apart, mesosternum with two (1+1) longitudinal ridges covered with dense hairs distally. Hind coxae slightly wider apart, mesosternal ridge continued onto metasternum diverging posteriorly. Sternites covered in uniform white hairs. Pro and mesopleura with scattered large pits (Fig. 37). Front and middle legs only differing slightly between sexes (Figs 39 & 40 ♂; 42 & 43 ♀). Hind legs longer, hind femora 1.25 - 1.3x longer than median pronotal length. Male hind legs 1.33x longer than front and middle legs (Fig. 41) and 1.22 - 1.3x in females (Fig. 44).

Male genital capsule (Figs 28 & 29).

Material examined: Brisbane, Moggill Farm Dam, 6.vi.1979, Qld; Sundown National Park, in marginal grasses around farm dam, 6.iv.1985 Qld; Sundown National park, Severn River, 6.iv.1985, Qld; Phillip Island, 31.iii.1985, Vic. found on densely overgrown pool with *Hebrus axillaris*; Ellery Gorge near Alice Springs, N.T. 28.iv.1979, I. Lansbury Coll. Tallandoo Lagoon, National Museum Victoria, Dartmouth Invertebrate Survey Vic. 3.ii.1975, M.B. Malipatil; N.M.V. Survey, Macallister Thomson River Junction Swamp Vic. 3.vii.1979, M.B. Malipatil; Red Lily Lagoon near Daly River N.T. 13°45'S-130°42'E, 5.viii.1980, M.B. Malipatil; Limestone Gorge, N.T. 16°02'S-130°23'E, 23-26.vi.1986 (Operation Kalcigh) M.B. Malipatil, N.T. Museum Coll.

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Figs 36-44. *Merragata haekeri* Hungerford, Sundown N.P., Qld. 36, dorsum; 37, ventral; 38; antennae; 39-41 ♂, 39, fore leg; 40, middle leg; 41, hind leg; 42-44 ♀, 42, fore leg; 43, middle leg; 44, hind leg.

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